

WHAT IS CLAIMED IS:

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1. A method for fabricating a liquid crystal display (LCD), comprising:
forming a first substrate and a second substrate;
forming patterned spacers on the first substrate;
forming oriented films on the first substrate and on the second substrate;
disposing the first substrate and the second substrate in a facing relationship wherein the oriented films on the first substrate and on the second substrate contact each other;
performing an orientation treatment on the oriented films on the first substrate and on the second substrate such that the oriented films bond the first substrate and the second substrate together; and
interposing a liquid crystal between the first substrate and the second substrate.
 2. The method of claim 1, wherein the liquid crystal is a smectic liquid crystal.
 3. The method of claim 1, wherein performing the orientation treatment includes performing light radiation on the oriented films.
 4. The method of claim 3, wherein the light radiation is performed with linearly polarized light.
 5. The method of claim 3, wherein the light radiation is performed with elliptically polarized light.
 6. The method of claim 3, wherein the light radiation is performed with UV light.
 7. The method of claim 3, wherein performing the orientation treatment includes pressing the first substrate and the second substrate together.

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8. The method of claim 1, wherein forming a first substrate includes: forming a plurality of crossing gate lines and data lines on the first substrate; forming thin film transistors at each crossing; and forming pixel electrodes that electrically connect to the thin film transistors.

9. The method of claim 1, wherein the patterned spacers are formed between the pixel electrodes.

10. A method for fabricating an LCD, comprising:
forming a first substrate and a second substrate;
forming a first oriented film on the first substrate and a second oriented film on the second substrate;
locating spacers on the first substrate;
disposing the first substrate and the second substrate in a facing relationship such that the spacers form a gap between the first substrate and the second substrate;
performing an orientation treatment on the first oriented film and on the second oriented film using light radiation and such that the first substrate and the second substrate are bonded together; and
interposing a liquid crystal between the first substrate and the second substrate.

11. The method of claim 10, wherein the spacers include photo cross-linkable adhesive spacers and ball spacers.

12. The method of claim 10, wherein the liquid crystal is a smectic liquid crystal.

13. The method of claim 10, wherein the first substrate and the second substrate are pressed together during orientation treatment.

14. The method of claim 10, wherein the light is lineally polarized light or elliptically polarized light.

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15. A method for fabricating a liquid crystal display, comprising:
forming a first substrate and a second substrate;
forming oriented films on the first substrate and on the second substrate;
disposing the first substrate and the second substrate in a facing relationship;
performing an orientation treatment on the oriented films using light radiation such
that the first substrate and the second substrate are bonded together; and
interposing a liquid crystal between the first substrate and the second substrate.

16. The method of claim 15, further including locating spacers on the first
substrate.

17. The method of claim 16, wherein the spacers are located by depositing and
then patterning a spacer material.

18. The method of claim 16, wherein the spacers are located by dispersing photo
cross-linkable adhesive spacers on the first substrate.

19. The method of claim 18, wherein ball spacers are located by dispersing ball
spacers on the first substrate between the photo cross-linkable adhesive spacers.

20. The method of claim 15, wherein the light radiation is performed using
linearly polarized light.

21. The method of claim 15, wherein the light radiation is performed using
elliptically polarized light.

22. A liquid crystal display, comprising:
a first substrate having patterned spacers;
a first oriented film, comprised of a light reactive material, over the first substrate
and over its patterned spacers, wherein the first oriented film forms a first alignment film;
a second substrate;

a second oriented film, comprised of a light reactive material, over the second substrate, wherein the second oriented film forms a second alignment film;

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a liquid crystal;

wherein the first substrate and the second substrate are in a facing relationship such that the first oriented film on the patterned spacers contacts the second oriented film, wherein the contacting oriented films bond the first substrate and the second substrate together, wherein a gap exists between portions of the first substrate and portions of the second substrate, and wherein the liquid crystal is disposed in the gap.

23. The liquid crystal display of claim 22 wherein the liquid crystal is a smectic liquid crystal.

24. The liquid crystal display of claim 22, wherein the light reactive materials on the first substrate and on the second substrate react to linearly polarized light.

25. The liquid crystal display of claim 22, wherein the light reactive materials on the first substrate and on the second substrate react to elliptically polarized light.

26. The liquid crystal display of claim 22, wherein the light reactive materials on the first substrate and on the second substrate react to UV light.

27. The liquid crystal display of claim 22, wherein the light reactive materials on the first substrate and on the second substrate are selected from a group consisting of materials with a polyvinylcinnamate lineage, a polyazobenzene lineage, a cellulose-cinnamate lineage and a photosensitive polyimide lineage.

28. The liquid crystal display of claim 22, wherein the patterned spacers are between pixel electrodes.

29. A liquid crystal display, comprising:
a first substrate;

a first oriented film, comprised of a light reactive material, over the first substrate, wherein the first oriented film forms a first alignment film;

a plurality of spacers on the first substrate;

a second substrate over the plurality of spacers such that the second substrate is disposed away from the first substrate;

a second oriented film, comprised of a light reactive material, on the second substrate and disposed between the first substrate and the second substrate and in contact with the plurality of spacer, wherein the second oriented film forms a second alignment film; and

a liquid crystal between the first substrate and the second substrate;

30. The liquid crystal display claim 29, wherein the plurality of spacers include photo cross-linkable adhesive spacers that bond the first substrate to the second substrate.

31. The liquid crystal display claim 29, wherein the plurality of spacers include ball spacers.

32. The method of claim 29, wherein the liquid crystal is a smectic liquid crystal.

33. The liquid crystal display of claim 29, wherein the light reactive materials on the first substrate and on the second substrate react to linearly polarized light.

34. The liquid crystal display of claim 29, wherein the light reactive materials on the first substrate and on the second substrate react to elliptically polarized light.

35. The liquid crystal display of claim 29, wherein the light reactive materials on the first substrate and on the second substrate react to UV light.

36. The liquid crystal display of claim 29, wherein the light reactive materials on the first substrate and on the second substrate are selected from a group consisting of

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materials with a polyvinylcinnamate lineage, a polyazobenzene lineage, a cellulose-cinnamate lineage and a photosensitive polyimide lineage.

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